VT Center for Geographic Information

Vermont GIS Parcel Data Standard

Version 1.0

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Acknowledgements

This data standard was drafted by staff at the VT Center for Geographic Information (VCGI). VCGI would like to thank the members of the VT Parcel Data Standard and Guideline Subcommittee of the VCGI Technical Advisory Committee (TAC):

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VCGI staff and the subcommittee used the following resources in support of their efforts:

- The VT Municipal Property Mapping Guideline (2006)
- MassGIS Standard for Digital Parcel Files (Version 2.0, November 2010)
- Connecticut Geospatial Information Systems Council Cadastral Data Standards and Guidelines (2008)
- State of Maine Standards for Digital Parcel Files (2005)
- New York State GIS Coordinating Body Cadastral Data Standard Recommendation (2006)
- International Association of Assessing Officers Standard on Digital Cadastral Maps and Parcel Identifiers (2009)

Statutory Authority

Vermont Statutes: Title 10: Conservation & Development – Chapter 8: Geographic Information – 10 V.S.A. § 123. Powers and duties

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If you have questions about this standard, or would like to check for the newest version, contact us:

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Introduction

Tax maps are one of the most important local government information assets. GIS (geographic information system) parcel data is the digital, geographically-referenced data used to represent parcel boundaries, unlanded dwellings, and associated attribute information on municipal tax maps. Although GIS parcel data cannot replace detailed ground surveys, the data does assist municipal officials with functions such as accurate property tax assessment, conservation, planning and zoning. Towns can link their maps to their electronic municipal grand list data (e.g. NEMRC data) and display local information. Officials can show tax-payers how proposed development or changes in municipal services and regulations will affect them and their neighbors. In many towns, parcel data also helps to provide public notices, plan bus routes, and carry out other municipal services.

Definitions

Tax Map - A digital or printed map that defines and identifies owned property in a town that is recorded in a Grand List.
Parcel - State statute defines a parcel as "... all contiguous land in the same ownership, together with all improvements thereon"(32 V.S.A. § 4152(a)(3)).
Property - Land, improvements to the land, and dwellings recorded in a Grand List.
Grand List - As of April 1st of any given year, a listing of all real property and business personal property within a town.
SPAN - School Property Account Number - a unique, state-assigned identification number for each parcel.
Map ID - Unique polygon identifier, determined by the municipality, which is distinct from the unique identifier in the Grand List (SPAN and NEMRC parcel code).
Discrepancy List - list of properties with ownership or area conflicts/uncertainty above a threshold agreed upon by municipality and map consultant.
NEMRC - New England Municipal Resource Center (creator/seller of software used to manage Grand List data)
Ownership Hook - Two (or more) polygons on the tax map may be assigned the same parcel number and linked to just one record in the lister's database. These are commonly graphically indicated on maps with "parcel-hook" symbols linking the parcel polygons involved.
Shapefile - a popular geospatial vector data format for geographic information systems software. It is developed and regulated by ESRI (www.esri.com). Shapefile types include:

- *Point* - represents an entity with no area, such as an unlanded structure.
- *Polygon* - represents an area, such as a parcel, a road, or water body.
- *Line* - represents an entity with length with no area, such as a road or stream centerline.

Metadata - Documentation about the data, including date, source, and provider. See core metadata form attached.

Objectives of this Data Standard

1. Define technical requirements for municipalities to utilize when creating or updating GIS parcel data. Separate levels of this standard will allow municipalities to pick a level suitable for procurement, budget and resource considerations and ensure that high quality and reliable parcel information products are developed.
2. Establish common data elements and ensure consistency between different municipal parcel datasets with the goal that all town parcel datasets can be merged into a single statewide GIS dataset.

Applicability of this Data Standard

Compliance with this standard is recommended for any community that contracts for or otherwise arranges creation of a GIS version of their municipal tax maps. This requirement will not usually be burdensome for most communities, as digital parcel files developed by those experienced in the issues of GIS data and application development would comply

with most, if not all, of the requirements as a matter of good professional practice. Any state agency that supplies funds to municipalities or regional planning agencies to develop or update parcel data should require that this standard be used in the creation or update of the parcel datasets.

Municipal parcel maps are for tax assessment purposes and, unlike areas outside New England, are not the legal (cadastral) record of property ownership. While property boundaries on assessor maps often serve as a proxy for ownership, any authoritative representation of property ownership must be based on records from the municipality and/or work by a licensed professional land surveyor.

Please note that this standard is NOT a general purpose standard for traditional printed parcel map sheets. This standard is for developing digital versions of municipal parcel maps for use in planning, property assessment, and graphic map display. However, there is no intent to provide a standard for developing the authoritative definition of property boundaries or to specify limits for legal boundary determination or property conveyance purposes. Matters related to those more definitive interests remain the purview of the professional title attorney and/or professional land surveyor.

Templates are Available

VCGI provides metadata, shapefile, and geodatabase templates that can help in the conversion to or creation of data that meets the Level 1 VT GIS Parcel Data Standard: www.vcgi.org or call 802-882-3001.

Explanation of Levels

Level 1 is meant to describe minimum components of digital parcel data that are required in order to meet the objective identified above. Level 2 provides the framework to develop an enhanced parcel map and database that may be more useful to the municipality, but is not required in order to be considered to have met the data standard.

Level 1: GIS Parcel Data Standard Requirements

Minimum Deliverables: GIS data and metadata having the characteristics described below.

Coordinate System and Datum: Vermont State Plane Meters, NAD 83 (National Spatial Reference System (NSRS) or most current).

Characteristics, Features, and Format

- Deliverable shall consist of at least one shapefile containing all landed property polygons as well as roads, legal trails, and surface waters as described below.
- Unlanded, taxed condominiums, mobile homes, and other buildings shall be represented in a separate point shapefile.
- Shapefiles shall follow a naming convention:
    - VTPARCEL_TOWNNAMEYEAR_POLY
    - VTPARCEL_TOWNNAMEYEAR_PTS
- Naming convention example:
    - VTPARCEL_MONTPELIER2012_POLY.SHP
    - VTPARCEL_WATERBURY2012_PTS.SHP
- Polygon depiction of closed parcels shall have clean topology – no gaps or slivers.
- All public roads and legal trails identified on the VTrans General Highway Maps (also known as Town Highway Maps) shall be represented as polygons.
- All surface waters that serve as property boundaries shall be represented as polygons.
- All polygons shall be closed at the town boundary.

Attributes: All polygon or point features shall have the following attributes at a minimum. Values refers to the actual number, code or characters that will appear in the attribute table for each feature. ***Please note*** that "unlanded" will be the value for all point features in the PROPTYPE field, and should not be the value in that field for any polygon features.

Field Name	Values	Description	Character/Integer	Number of places
SPAN	Unique number assigned by VT Dept. of Taxes	Unique number assigned by VT Dept. of Taxes	Character	13
MAPID	Unique identification assigned by town	Unique identification assigned by town	Character	50
PROPTYPE			Character	10
	PARCEL	Taxed parcel *(Please note that this value will only appear in the polygon shapefile)*		
	ROAD	Public roads and legal trails as defined on the VTrans General Highway Maps *(Please note that this value will only appear in the polygon shapefile)*		
	WATER	Polygonal water body that serves as a parcel boundary *(Please note that this value will only appear in the polygon shapefile)*		
	UNLANDED	Condominium, mobile home, camp or other unlanded structure not represented in polygon data *(Please note that this value will only appear in the points shapefile)*		
ANSI	Unique federal code issued by the American National Standards Institute (ANSI)	see VGIS Data Standards, Geographic Area Codes (www.vcgi.org)	Character	5
YEAR	Year (see VT GIS Parcel Mapping Guideline)	Year that mapping data represents (or 9999 if unknown)	Integer	4

Here is an example of what the attribute table might look like for one property:

SPAN	MAPID	PROPTYPE	ANSI	YEAR
1234567890123	10-23-45	parcel	06550	2010

Metadata: Core metadata is required for each shapefile - see attached form. Metadata shall be provided in digital format.

Level 2: GIS Parcel Data Standard Recommendations

These recommendations are intended as information about "best practices" for those who are planning to create GIS parcel data that go beyond the Level 1 standard. Level 2 provides the framework to develop an enhanced parcel map and database that may be more useful to the municipality, but is not required in order to be considered to have met the data standard. Please refer to the VCGI web site for more information about GIS technology, terminology, and functions (www.vcgi.org).

Deliverables: All identified in Level 1 (see additional attribute options below) plus a Discrepancy List of comparisons between parcels and grand list, acreages and identification of ownership. Please see the VT GIS Parcel Mapping Guideline (www.vcgi.org) for more information about thresholds for inclusion on the Discrepancy List.

Coordinate System and Datum: Vermont State Plane Meters, NAD 83 (U.S. National Spatial Reference System (NSRS) or most current)

Characteristics, Features, and Format:

- All identified in Level 1 GIS Parcel Data Standard Requirements.
- Shapefile(s) and optional personal or file geodatabase are acceptable.
- Shapefiles shall follow a naming convention:
    - VTPARCEL_TOWNNAMEYEAR_POLY,
    - VTPARCEL_TOWNNAMEYEAR_PTS, and
    - VTPARCEL_TOWNNAMEYEAR_LINE
- Naming convention example:
    - VTPARCEL_MONTPELIER2012_POLY.SHP or
    - VTPARCEL_WATERBURY2012_PTS.SHP, or
    - VTPARCEL_BOLTON2012_LINE.SHP
- All named public roads shall be stored as individual polygons within the master dataset.
- One or more separate features depicting important line data may be included.

Attributes:

- All identified in Level 1 GIS Parcel Data Standard Requirements.
- Rail and Private Road are additional values for PROPTYPE.
- Polyline Type if polyline data is included - see table below.
- Polyline Source if polyline data is included - see table below.
- Parcel Boundary Status if polyline data is included - whether line is a parcel boundary or not - see table below.
- Feature level metadata for any polyline data - see table below.

Polyline Attributes: The following fields and values should be used in the polyline attribute table.

Field Name	Values	Description	Character/Integer	Number of places
PLTYPE		Polyline Type	Character	15
	PARCEL	Parcel boundary only		
	TOWN	Town boundary		
	VILLAGE	Village boundary		
	STATE	State boundary		
	COUNTRY	International boundary		
	WATER	Surface water feature that is also a parcel boundary		
	SUBPARCEL	Common ownership property line		
	PUBROAD	Public road		
	PRIVROAD	Privately owned road		
	RAIL	Railroad owned parcel or right-of-way		
	BREAKLINE	Division of status or name (not for map display)		
	DISPUTE	Parcel boundary whose location is disputed		
	HOOK	Parcel/land ownership hooks		
PLSOURCE		Polyline Source (should be updated to reflect most current source as changes are made)	Character	15
	SURVEY	Survey		
	DEED	Deed		
	PAPER	Paper Map (not survey)		
	CALC	Calculated		
	LOCAL	Local Knowledge		
	HYDRO	VT Hydrography Dataset (surface waters were used to determine line location)		
	ORTHO	Orthophoto		
	OTHER	Other		
	UNKNOWN	Unknown		
PLNOTES		Notes about the line	Character	255

PARCBOUND		Parcel boundary status	Character	1
	Y	Yes		
	N	No		
UPDDATE	yearmonthday	Date of most recent update to the line	Integer	8
UPDNOTES		Notes by person who updated the feature	Character	255

Polygon and Point Attributes: ***Please note*** that "unlanded" will be the value for all point features in the PROPTYPE field, and should not be the value in that field for any polygon features.

Field Name	Values	Description	Character/Integer	Number of places
SPAN	Unique number assigned by VT Dept. of Taxes	Unique number assigned by VT Dept. of Taxes	Character	13
MAPID	Unique identification assigned by town	Unique identification assigned by town	Character	50
PROPTYPE			Character	10
	PARCEL	Taxed parcel *(Please note that this value will only appear in the polygon shapefile)*		
	PUBROAD	Public roads and legal trails as defined on the VTrans General Highway Maps *(Please note that this value will only appear in the polygon shapefile)*		
	PRIVROAD	Private roads *(Please note that this value will only appear in the polygon shapefile)*		
	RAIL	Rail owned parcels *(Please note that this value will only appear in the polygon shapefile)*		
	WATER	Polygonal water body that serves as a parcel boundary *(Please note that this value will only appear in the polygon shapefile)*		
	UNLANDED	Condominium, mobile home, camp or other unlanded structure not represented in polygon data *(Please note that this value will only appear in the points shapefile)*		
ANSI	Unique federal code issued by the American National Standards Institute (ANSI)	This code indicates the town - please see VGIS Data Standards, Geographic Area Codes (www.vcgi.org)	Character	5
YEAR	Year	Year that mapping data represents (or 9999 if unknown) - please see VT GIS Parcel Mapping Guideline for details on how the year is determined.	Integer	4

Metadata: The Content Standard for Digital Geospatial Metadata (CSDGM): http://www.fgdc.gov/metadata/geospatial-metadata-standards#csdgm. To be provided in digital format.

Core Metadata

Data Layer Name (note that a separate form should be submitted for each data layer)**:**

Description (Examples of Description include, but are not limited to: an abstract, table of contents, reference to a graphical representation of content or a free-text account of the content):

Creator (Name and contact information: an entity primarily responsible for making the content of the data layer, e.g. mapping contractor):

Publisher (An entity responsible for making the resource available for distribution. Examples might include the town, the RPC or VCGI):

Source (If data layer was derived from an existing data layer, name of existing source data layer, source materials, source scale):

Dataset Collection Dates: (Describe first & last day of data collection or earliest/latest date in the data; format is YYYY/MM/DD. The Grand List year and date exported for use in parcel map development shall be noted):

Coverage (Geographic extent of the data layer, temporal period if relevant (e.g., data that is purely historical)):

Feature Type (if applicable. Example entries are point, line, polygon, table, raster, image):

Accuracy (scale, if known; positional error; any known errors in positional data and attribute data):

Attributes (include field names, definitions, and code meanings):

Disclaimer – (include this statement in the metadata): This data layer is not a legal survey. It is not a legal conveyance or description of property and is intended for planning purposes only.